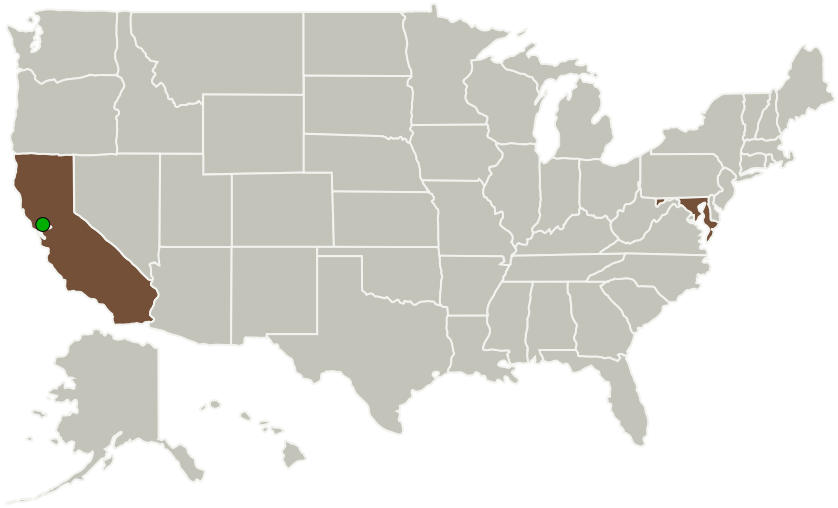
GameSAT: Game-Based Situational Awareness and Telepresence, Phase I

Completed Technology Project (2010 - 2010)

Project Introduction

We propose that a virtual environment is necessary to allow NASA robot engineers and operators to study rover design concepts, develop user interfaces and focus on providing the highest possible level of situational awareness and telepresence possible. The two main areas of research for this virtual environment focus upon: 1) determining the appropriate level of modeling and simulation required for the environment, and 2) the on-going use of the virtual world as a sandbox or testbed for robot experimentation and analysis. We intend to research and develop GameSAT, a game technology based virtual world sandbox to study rover design concepts and perfect the user interfaces, situational awareness and telepresence needed to use those rovers in a lunar mixed human/robot environment. GameSAT is envisioned to interface with existing systems to allow current NASA tools to operate a virtual rover in our simulation, a rover on the test range or the moon seamlessly 3) invisible to the current control tools.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
BreakAway, Ltd.	Lead Organization	Industry	Hunt Valley, Maryland
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

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Primary U.S. Work Locations	
California	Maryland

Project Transitions

January 2010: Project Start

July 2010: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139025)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

BreakAway, Ltd.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

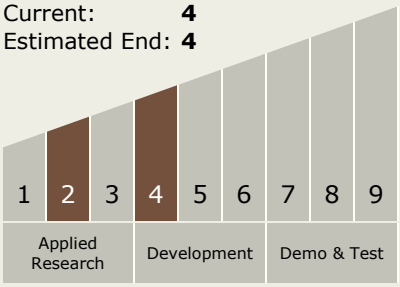
Carlos Torrez

Principal Investigator:

Andrew House

Technology Maturity (TRL)

Start: **2**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - TX11.3 Simulation
    - TX11.3.3 Model-Based Systems Engineering (MBSE)

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System